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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/788,568

02/27/2004

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4740-239

9113

24112 7590 06/24/2009
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EXAMINER

VUONG, QUOCHIEN B

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

06/24/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/788,568	Applicant(s) TSAI ET AL.	
	Examiner Quochien B. Vuong	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments, see Applicant's Remarks, filed 03/31/2009, with respect to claims 1-52 have been fully considered and are persuasive. The previous final rejection of claims 1-52 has been withdrawn.

Applicant's arguments with respect to claims 1-52 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Damnjanovic et al. (US Pub 2003/0050084) in view of Black et al. (US 6,594,501).

Regarding claim 1, Damnjanovic et al. disclose a method of reverse link power control at a mobile station (Abstract; Page 1, Para 0002; Page 4, Para 0042; and Page 6, Para 0062 of Damnjanovic et al.), comprising: transmitting a pilot signal at a controlled transmit power from the mobile station to one or more remote transceivers (Page 2, Para 0012 & 0017 and Page 7, Para 0072 & 0075 of Damnjanovic et al.); transmitting one or more traffic channel signals from the mobile station at one or more power gains directly or indirectly relative to the transmit power of the pilot signal (Fig. 5-

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6 & 9-10; Page 2, Para 0012 & 0017; Page 5, Para 0052; Page 6, Para 0069; Page 7, Para 0072; Page 9, Para 0088; Page 10, Para 0096; and Page 11, Para 0105 of Damnjanovic et al.) Damnjanovic et al. does not explicitly teach is a mobile station that receives reception quality feedback from the one or more network base stations. However, Black et al. discloses a mobile communication system includes a base station which is performed transmission power control of the mobile station by sending the reception quality feedback to the mobile station (column 3, line 49 – column 5, line 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the teaching of Black et al. for providing the receiving reception quality feedback to the mobile station to the method of Damnjanovic et al. to better control the transmission power of the mobile station in order to achieve a desired signal-to-noise ratio at the base station.

As for claim 2, Damnjanovic et al. teaches a method of reverse link power control at a mobile station, wherein transmitting one or more traffic channel signals at one or more power gains relative to the transmit power of the pilot signal comprises transmitting a first traffic channel signal at a first power gain relative to the pilot signal, and transmitting a second traffic channel signal at a second power gain relative to the first traffic channel signal (Fig. 5-6 & 9-10; Page 2, Para 0012 & 0017; Page 5, Para 0052; Page 6, Para 0069; Page 7, Para 0072; Page 9, Para 0088; Page 10, Para 0096; and Page 11, Para 0105 of Damnjanovic et al.).

As for claims 3-4, Damnjanovic et al. teaches a method of reverse link power control at a mobile station, further comprising setting the second power gain responsive

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to receiving reception quality feedback for the second traffic channel signal such that the transmit power of the second traffic channel signal relative to the transmit power of the first traffic channel signal varies as a function of the reception quality feedback received by the mobile station for the second traffic channel signal and maintaining the first traffic channel at a fixed power gain relative to the pilot signal (Fig. 5-6 & 9-10; Page 2, Para 0012 & 0017; Page 5, Para 0052; Page 6, Para 0069; Page 7, Para 0072; Page 9, Para 0088; Page 10, Para 0096; and Page 11, Para 0105 of Damnjanovic et al.).

As for claim 5, Damnjanovic et al. teaches a method of reverse link power control at a mobile station, wherein adjusting the power gain of one or more of the traffic channel signals responsive to receiving reception quality feedback from one or more remote transceivers for the one or more traffic channel signals comprises receiving reception quality feedback for at least one traffic channel signal and adjusting the power gain of that traffic channel signal relative to the transmit power of the pilot signal, or relative to a transmit power of another traffic channel signal that is transmitted with a power gain relative to the transmit power of the pilot signal (Fig. 5-6 & 9-10; Page 2, Para 0012 & 0017; Page 5, Para 0052; Page 6, Para 0069; Page 7, Para 0072; Page 9, Para 0088; Page 10, Para 0096; and Page 11, Para 0105 of Damnjanovic et al.).

As for claim 6, Damnjanovic et al. teaches a method of reverse link power control at a mobile station, wherein transmitting a pilot signal at a controlled transmit power comprises adjusting a transmit power of the pilot signal responsive to power control commands received by the mobile station from one or more network base

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stations (Abstract; Page 3, Para 0034; Page 4, Para 0038-0039 & 0045; Page 7, Para 0075; and Page 8, Para 0078 of Damnjanovic et al.).

As for claim 7, Black et al. teach wherein the mobile station receives reception quality feedback for a given one of the one or more traffic channel signals as good and bad reception indicators that indicate good or bad reception by one or more network base stations (column 6, line 57 – column 11, line 32).

As for claim 8, Black et al. teach wherein the mobile station adjusts the power gain of the given traffic channel signal by decreasing the power gain responsive to receiving one or more good reception indicators, and increases the power gain responsive to receiving one or more bad reception indicators (column 6, line 57 – column 11, line 32).

As for claim 9, Black et al. teach wherein the good and bad reception indicators comprise ACKs and NAKs, respectively, and wherein the mobile station adjusts the power gain of the given traffic channel signal by decreasing the power gain responsive to receiving one or more ACKs and increasing the power gain responsive to receiving one or more NAKs (column 6, line 57 – column 11, line 32).

As for claims 10-11, Black et al. teach wherein the mobile station increases the power gain for the given traffic channel signal by a first step size responsive to receiving a NAK and/or decreases the power gain for the given traffic channel signal by a second, smaller step size responsive to receiving an ACK (column 6, line 57 – column 11, line 32).

As for claim 12, Black et al. teach calculating the second step size as a function of the first step size and a Frame Error Rate (FER) determined from the ACK/NAK feedback (column 6, line 57 – column 11, line 32).

As for claim 13, Black et al. teach wherein the reception quality feedback comprises one or more of ACK/NAK feedback, quality indication feedback, and erasure indication feedback (column 6, line 57 – column 11, line 32).

Regarding claim 14, see explanation as set forth regarding claim 1 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 15, see explanation as set forth regarding claim 2 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claims 16-17, see explanation as set forth regarding claims 3-4 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 18, see explanation as set forth regarding claim 5 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 19, see explanation as set forth regarding claim 6 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 20, see explanation as set forth regarding claim 8 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

As for claims 21-22, Damnjanovic et al. teaches a mobile station, wherein the mobile station is configured to increase the power gain for the given traffic channel signal by a first step size responsive to receiving a bad reception indicator and/or to decrease the power gain for the given traffic channel signal by a second, smaller step size responsive to receiving a good reception indicator (Fig. 5-6 & 9-10; Page 2, Para 0012 & 0017; Page 5, Para 0052; Page 6, Para 0069; Page 7, Para 0072; Page 9, Para 0088; Page 10, Para 0096; and Page 11, Para 0105 of Damnjanovic et al.).

Regarding claim 23, see explanation as set forth regarding claim 12 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 24, see explanation as set forth regarding claim 13 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

As for claim 25, Damnjanovic et al. teaches a method of data link power control at a communication transceiver, comprising: controlling a transmit power of a signal transmitted by the communication transceiver responsive to one or more received power control commands and receiving reception quality information relating to a signal (Fig. 5-6 & 9-10; Page 2, Para 0012 & 0017; Page 5, Para 0052; Page 6, Para 0069; Page 7, Para 0072; Page 9, Para 0088; Page 10, Para 0096; and Page 11, Para 0105

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of Damnjanovic et al.). Damnjanovic et al. do not explicitly teach adjusting the power gain of the second signal responsive to the reception quality feedback. However, Black et al. discloses a mobile communication system includes a base station which is performed transmission power control of the mobile station by sending the reception quality feedback to the mobile station (column 3, line 49 – column 5, line 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the teaching of Black et al. for providing the receiving reception quality feedback to the mobile station to the method of Damnjanovic et al. to better control the transmission power in order to achieve a desired signal-to-noise ratio at the receiver station.

As to claim 26, Black et al. disclose wherein transmitting a second signal at an adjustable transmit power having a power gain relative to the transmit power of the first signal comprises setting its transmit power for the second signal as a function of the transmit power of first signal and the power gain, and wherein the transceiver adjusts that power gain up and down as needed responsive to receiving reception quality feedback for the second signal from a remote transceiver receiving the second signal (column 6, line 57 – column 11, line 32).

As for claim 27, Damnjanovic et al. teaches a method of data link power control at a communication transceiver, further comprising transmitting a third signal having a power gain relative to the transmit power of the first signal, and setting the power gain of the second signal relative to the third signal (Fig. 5-6 & 9-10; Page 2, Para 0012 &

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0017; Page 5, Para 0052; Page 6, Para 0069; Page 7, Para 0072; Page 9, Para 0088; Page 10, Para 0096; and Page 11, Para 0105 of Damnjanovic et al.).

As for claim 28, Black et al. teach wherein adjusting the power gain of the second signal responsive to the reception quality feedback comprises adjusting the power gain of the second signal relative to the first and third signals such that power ratios of the first and third signals to the second signal change as a function of reception quality feedback received for the second signal (column 6, line 57 – column 11, line 32).

As for claim 29, Damnjanovic et al. teach a method of data link power control at a communication transceiver, further comprising adjusting an inner-loop power control target of the first signal based on a received signal quality of the third signal (Page 4, Para 0047 of Damnjanovic et al.).

As for claim 30, Damnjanovic et al. teaches a method of data link power control at a communication transceiver, wherein the first signal comprises a pilot signal, and the second and third signals comprise first and second traffic channels, respectively (Fig. 5-6 & 9-10; Page 2, Para 0012 & 0017; Page 5, Para 0052; Page 6, Para 0069; Page 7, Para 0072; Page 9, Para 0088; Page 10, Para 0096; and Page 11, Para 0105 of Damnjanovic et al.)

As for claim 31, Black et al. teach wherein controlling a transmit power of a first signal transmitted by the communication transceiver responsive to received power control commands comprises transmitting a pilot signal and adjusting the transmit power of the pilot signal responsive to the received power control commands, and wherein transmitting a second signal at an adjustable transmit power having a power

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gain relative to the transmit power of the first signal comprises transmitting a data signal at a transmit power determined by the transmit power of the pilot signal and the power gain (column 6, line 57 – column 11, line 32).

As for claim 32, Black et al. teach wherein receiving reception quality feedback relating to the second signal comprises receiving good and bad reception indicators that indicate whether a remote transceiver correctly received data carried by the data signal (column 6, line 57 – column 11, line 32).

As for claim 33, Black et al. teach wherein receiving good and bad reception indicators that indicate whether a remote transceiver correctly received data carried by the data signal comprises receiving ACK/NAK indications from the remote transceiver for each frame of the data signal, and wherein adjusting the power gain of the second signal relative to the first signal responsive to the reception quality feedback comprises increasing the power gain by a first amount responsive to receiving a NAK and decreasing the power gain by a second amount responsive to receiving an ACK (column 6, line 57 – column 11, line 32).

As for claim 34, Damnjanovic et al. teaches a method of data link power control at a communication transceiver, wherein the communication transceiver comprises a mobile station, the first signal comprises a pilot signal, and the second signal comprises a traffic channel signal, and wherein controlling a transmit power of a first signal transmitted by the communication receiver responsive to received power control commands comprises controlling the transmit power of the pilot signal responsive to power control commands transmitted to the mobile station by one or more network base

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stations (Abstract; Page 3, Para 0034; Page 4, Para 0038-0039 & 0045; Page 7, Para 0075; and Page 8, Para 0078 of Damnjanovic et al.).

As for claim 37, Damnjanovic et al. teaches a method of data link power control at a communication transceiver, wherein the communication transceiver comprises a network base station in a wireless communication network (Fig. 1; Page 3, Para 0029; and Page 17, claim 78 of Damnjanovic et al.).

Regarding claim 38, see explanation as set forth regarding claim 13 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 39, Damnjanovic et al. teaches a communication transceiver, comprising: transceiver circuits to transmit and receive signals to and from one or more remote transceivers; and one or more processing circuits operatively associated with the transceiver circuits, said one or more processing circuits including a power control circuit configured to: control a transmit power of a first signal transmitted by the communication transceiver responsive to power control commands received by the communication transceiver (Abstract; Page 3, Para 0034; Page 4, Para 0038-0039 & 0045; Page 7, Para 0075; and Page 8, Para 0078 of Damnjanovic et al.). Damnjanovic et al. do not explicitly teach is adjusting the power gain responsive to the reception quality feedback received by the communication transceiver for the second signal. However, Black et al. discloses a mobile communication system includes a base station which is performed transmission power control of the mobile station by sending the reception quality feedback to the

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mobile station (column 3, line 49 – column 5, line 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the teaching of Black et al. for providing the receiving reception quality feedback to the mobile station to the method of Damjanovic et al. to better control the transmission power in order to achieve a desired signal-to-noise ratio at the remote station.

Regarding claim 40, see explanation as set forth regarding claim 27 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 41, see explanation as set forth regarding claim 28 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 42, see explanation as set forth regarding claim 29 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 43, see explanation as set forth regarding claim 30 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claims 44-45, see explanation as set forth regarding claim 31 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 46, see explanation as set forth regarding claim 32 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 47, see explanation as set forth regarding claims 20-22 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 48, see explanation as set forth regarding claim 13 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 49, see explanation as set forth regarding claim 30 (method claim) because the claimed mobile station for reverse link power control would perform the method steps.

Regarding claim 52, Black et al. teach wherein the good and bad reception indicators comprise ACKs and NAKs, respectively, and wherein the mobile station adjusts the power gain of the given traffic channel signal by decreasing the power gain responsive to receiving one or more ACKs and increasing the power gain responsive to receiving one or more NAKs (column 6, line 57 – column 11, line 32).

Claims 35-36, 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over of Damnjanovic et al. in view of Black et al. as applied to claims 34 and 49 above, respectively, and further in view of Parkvall et al. (US Patent 2002/0080719).

As for claim 35, Damnjanovic et al. and Black et al. teach a method of data link power control at a communication transceiver (Col. 6, lines 47-64 of Damnjanovic et al.), wherein transmitting a second signal at a controlled power gain relative to the first signal (Col. 1, lines 34-54 of Chaponniere et al.). Damnjanovic et al. and Black et al. do not explicitly teach are network base stations on a per frame basis. However Parkvall et al. a method of data link power control at a communication transceiver, comprises of transmitting data frames on the traffic channel signal wherein receiving reception quality feedback relating to the second signal comprises receiving reception quality feedback from one or more network base stations on a per frame basis (Page 5, Para 0046-0047 of Parkvall et al.). Therefore, it would have been obvious to one of ordinary skill of the art at the time the invention was made to adapt the teaching of Parkvall et al. to the reverse link power control of Damnjanovic et al. and Black et al. for controlling the transmission power per frame in order to reduce the frame error.

As for claim 36, Black et al. teach wherein the reception quality feedback comprises ACK/NAK indicator feedback, and wherein the mobile station adjusts the power gain of the given traffic channel signal by decreasing the power gain responsive to receiving one or more ACKs and increasing the power gain responsive to receiving one or more NAKs (column 6, line 57 – column 11, line 32).

Regarding claim 50, Black et al. teach wherein the mobile station is configured to receive the power control commands and the reception quality feed back from one or more base stations of a wireless communication network that are supporting the mobile station (column 6, line 57 – column 11, line 32). Damnjanovic et al. and Black et al. do

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not explicitly teach the mobile is configured to transmit data frames on the traffic channel. However Parkvall et al. a method of data link power control at a communication transceiver, comprises of transmitting data frames on the traffic channel (Page 5, Para 0046-0047 of Parkvall et al.). Therefore, it would have been obvious to one of ordinary skill of the art at the time the invention was made to adapt the teaching of Parkvall et al. to the reverse link power control of Damnjanovic et al. and Black et al. for controlling the transmission power per frame in order to reduce the frame error.

Regarding claim 51, Parkvall et al. teaches a communication transceiver, the reception quality feedback comprises ACK/NAK feedback, and wherein the power control circuit is configured to increase the power gain of the traffic channel signal relative to the pilot signal by retransmitting a data frame for which a NAK was received by the mobile station according to a desired retry protocol, and increasing the power gain if the retransmission is unsuccessful (Page 2, Para 0011 & 0015; Page 3, Para 0021; Page 4, Para 0041; Page 6, Para 0056-0057 in respect to Page 1, Para 0004-0005 & 0009 and Page 5, Para 0045 & 0057 of Parkvall et al.).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quochien B. Vuong whose telephone number is (571) 272-7902. The examiner can normally be reached on M-F 9:30-18:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quochien B Vuong/
Primary Examiner, Art Unit 2618